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SURGICAL INSTRUMENT SERVICE COMPANY, INC.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

SURGICAL INSTRUMENT SERVICE
COMPANY, INC.

Plaintiff/Counter-Defendant,

v.

INTUITIVE SURGICAL, INC.,

Defendant/Counterclaimant.

Case No. 3:21-cv-03496-VC

Honorable Vince Chhabria

**PLAINTIFF SURGICAL
INSTRUMENT SERVICE COMPANY,
INC.'S OPPOSITION TO
INTUITIVE'S MOTION TO EXCLUDE
KURT HUMPHREY'S EXPERT
OPINION TESTIMONY**

Hearing: June 8, 2023

Time: 10:00 AM PT

Courtroom: Courtroom 5, 17th Floor

Judge: The Honorable Vince Chhabria

Complaint Filed: May 10, 2021

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MEMORANDUM OF POINTS AND AUTHORITIES

Intuitive begins its Motion by posing the following hypothetical: “As anyone who has furiously fiddled with the connection for a plug-in phone charger or headphone jack will tell you, wireless technology can be an improvement over wired technology.” Dkt. 118 at p.1.¹ But EndoWrists are not like a smartphone that is primarily useful when not directly connected to an electrical outlet, or wired headphones that can get wrapped up while connected to a smartphone functioning as a music player. EndoWrists in fact are useless when not rigidly physically attached to a da Vinci robot arm. When rigidly physically attached to da Vinci robot arm, there are numerous direct, precise physical connections that are necessary for the tools at the EndoWrist distal end to perform safety-critical surgical movements. Yet, when Intuitive moved from its S/Si instrument family to its X/Xi family, it replaced a simple and reliable pogo pin electrical connection from the EndoWrist use counter chip to the robot arm with a wireless connection transmitted by an RFID chip.

Kurt Humphrey, an engineer with decades of experience in product design and reverse engineering for electromechanical and wireless devices, examined Intuitive’s contemporaneous design documentation and communications of its lead engineers to understand Intuitive’s actual engineering reasoning for its peculiar decision to swap in a wireless connection for a device that is necessarily directly physically connected. His opinions on this subject are right in the wheelhouse of his decades of directly relevant product design and reverse engineering experience.

The stated reason for Intuitive’s peculiar design change was to add encryption to prevent reverse engineering of the EndoWrist use counter to prevent use past Intuitive’s marketing-selected use limits. But even Intuitive’s boost to X/Xi EndoWrist encryption could not prevent the reverse engineering of the X/Xi use counter – only Intuitive’s anti-competitive tactics of cutting off funding for reverse engineering efforts could accomplish

¹ References to Intuitive’s Motion are to the docket entry of the publicly filed brief and the page number within the brief, while references to exhibits attached to the Motion reference the exhibit numbers of the Cahoy declaration available at Dkt. 118-1. The under-seal Motion and exhibits are available at Dkt. 130-11-19.

that. Based on Mr. Humphrey’s personal experience with X/Xi reverse engineering and his decades of reverse engineering experience, Mr. Humphrey’s proffered testimony in this case also focuses on the fact – agreed to by Intuitive’s lead engineers and its encryption expert – that reverse engineering of encryption is a straightforward matter of time and resources. Mr. Humphrey is well qualified to testify as to the fact that there is nothing magic about the encryption of the X/Xi use counter that prevented it from being reverse engineered earlier than the recent successful reverse engineering by multiple third parties, absent Intuitive’s years of anti-competitive conduct.

I. Kurt Humphrey’s Expert Credentials and Assignment in this Case

On the very first page of the motion to exclude Kurt Humphrey’s expert opinions, Intuitive misleadingly and unfairly characterizes Mr. Humphrey as “a ceramics engineer”. Dkt. 118 at p. 1. Apparently, Intuitive hopes that simply characterizing Mr. Humphrey in this manner will lead the Court to infer that he lacks sufficient technical expertise to opine on the subject matter covered by his expert reports. An expert may be qualified “by knowledge, skill, experience, training or education.” Fed. R. Evid. 702. This inquiry is not a rote examination of college majors – so long as the expert is reasonably qualified, objections to the level of the expert’s expertise go to credibility and weight, not admissibility.

Kurt Humphrey does in fact have two academic degrees (a BS and an MS) in ceramic engineering that were obtained in the 1970s. Cahoy Dec. Ex. 9 at ¶ 2. However, Intuitive ignores Mr. Humphrey’s 40 years of engineering experience, including more than 20 years of experience as a “process development engineer and process integration manager” in “integrated circuit (IC) device and smart sensor processing.” Id. Intuitive also ignores the fact that during those 20 years, Mr. Humphrey engaged in reverse engineering “a large number and wide variety of semiconductor devices including microprocessors and non-volatile memories such as EEPROMs and Flash products for OEMs such as Apple, Alcatel-Lucent (Nokia) and others.” Id. at ¶ 3.

Intuitive further ignores the fact that Mr. Humphrey’s reverse engineering expertise specifically includes “RFID products such as smart EMV smartcards and other proximity integrated circuit cards (PICCs)”. Cahoy Dec. Ex. 9 at ¶ 3. This real-world experience includes projects where Mr. Humphrey had to “extract or ‘dump’ contents of specific EEPROMs and flash memories used in contactless RFID smart cards such as Visa payWave, Gemalto and other contactless EMV cards”, where “the primary objective was to analyze the code or firmware”. Id. at ¶ 4. As a result of all this practical experience, Mr. Humphrey describes his qualifications as including “general familiarity with encryption and security used in RFID communications, including encryption via stream ciphers and mutual authentication protocols.” Id. at ¶ 5.

Kurt Humphrey’s product design and reverse engineering experience involving RFID products is directly relevant to Intuitive’s design of the X/Xi EndoWrists because “Intuitive upgraded to a radio frequency identification (“RFID”) interface – a form of wireless communication.” Dkt. 118 at p. 3. Mr. Humphrey’s opening expert report spans some 27 pages. Cahoy Dec. Ex. 9. His assignment in this case was “to provide opinions about the encryption utilized on Intuitive Surgical Inc. (“Intuitive”) X and Xi Endowrist products.” Id. at ¶ 11. Those opinions are summarized in three paragraphs at the beginning of Mr. Humphrey’s opening report,. Id. at ¶¶ 14-16.

Mr. Humphrey’s specialized knowledge and experience make him qualified to discuss the implementations of Intuitive’s encryption design for the S/Si and X/Xi EndoWrists. Any supposed shortcomings in his experience can be addressed by Intuitive on cross-examination.

II. Standard of Review

The Court’s “gatekeeper role” is not intended to supplant the adversary system or the role of the jury. “In evaluating proffered expert testimony, the trial court is ‘a gatekeeper, not a fact finder.’” *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1043 (9th Cir. 2014) (quoting *Primiano v. Cook*, 598 F.3d 558, 565 (9th Cir. 2010)). The question

of whether the expert is credible or the opinion is correct is generally a question for the fact finder, not the court. see *Elosu v. Middlefork Ranch Inc.*, 26 F.4th 1017, 1024 (9th Cir. 2022) (“Challenges that go to the weight of the evidence are within the province of a fact finder, not a trial court judge. A district court should not make credibility determinations that are reserved for the jury.” (quoting *City of Pomona*, 750 F.3d at 1044)). “[S]haky but admissible evidence is to be attacked by cross examination, contrary evidence, and attention to the burden of proof, not exclusion.” *Elosu*, 26 F.4th at 1024 (quoting *Primiano*, 598 F.3d at 564); see *Pyramid Techs., Inc. v. Hartford Cas. Ins. Co.*, 752 F.3d 807, 814 (9th Cir. 2014) (“[W]hen an expert meets the threshold established by Rule 702, the expert may testify and the fact finder decides how much weight to give that testimony.” (quoting *Primiano*, 598 F.3d at 564–65)); *Elosu*, 26 F.4th at 1024 (“If the proposed testimony meets the thresholds of relevance and reliability, its proponent is entitled to have the jury decide upon its credibility, rather than the judge.” (cleaned up)).

Whether to admit or exclude expert testimony lies within the trial court’s discretion. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 141-42 (1997); see *United States v. Verduzco*, 373 F.3d 1022, 1032 (9th Cir. 2004) (“We . . . have stressed that the ‘trial court has broad discretion to admit or exclude expert testimony’.”). Further, “[a] trial court not only has broad latitude in determining whether an expert’s testimony is reliable, but also in deciding how to determine the testimony’s reliability.” *Ellis v. Costco Wholesale Corp.*, 657 F.3d 970, 982 (9th Cir. 2011).

III. Kurt Humphrey’s Expert Analysis Regarding Intuitive’s Product Design Changes Should Not Be Excluded

Intuitive alleges that Mr. Humphrey “devotes an entire section of his report to an argument that he has divined Intuitive’s motives, intent, and reasoning for upgrading the chip in the X/Xi, contending that Intuitive’s ‘primary concern’ was preventing third parties from resetting the use counter.” Dkt. 118 at p. 1. Kurt Humphrey does not attempt to divine Intuitive’s motives, intent, or hidden reasoning for upgrading the chip in the X/Xi. As Mr.

Humphrey explains, he examined Intuitive's design documents and communications between engineering leadership based on standard product design criteria:

It is reasonable to explore Intuitive's possible motivation(s) in replacing the DS2505 EPROM with the Atmel CryptoRF EEPROM chip. After all, the old adage, "If it ain't broke, don't fix it" applies to complex systems, such as remote robotic surgical platforms, as much as it applies to other products including integrated circuit (IC) design, as demonstrated by the continued industrial interest in IP reuse. This philosophy is reflected in an excerpt from Exhibit 241, "Instruments for the S/Si and Xi platforms are similar in many regards. The materials used in the distal portion of the S/Si 8mm instruments are identical to those used in the equivalent versions of the Xi 8mm instruments."⁴⁷ **The key factors in making significant design or component changes to any product are generally associated with performance/reliability, availability, and/or cost.**

Cahoy Dec. Ex. 9 at ¶ 37 (emphasis added).

Mr. Humphrey examines the Xi EndoWrist encryption design choice from a strictly engineering design perspective, based on official design documents and communications by engineering group leaders, and in comparison to the prior encryption design choice made by Intuitive engineers for the S/Si EndoWrists.² Based on his analysis, detailed in his report, Mr. Humphrey summarizes his opinion on this topic as: "Preventing third parties from accessing the use counter was Intuitive's primary concern³ when it selected the encryption used with Xi EndoWrists, and to this day Intuitive encrypts the communication of use counter data but does not encrypt communication of safety-critical patient sensor data."

Cahoy Dec. Ex. 9 at ¶ 16; *see also*, Ex. 12 at ¶ 14.⁴

To support its contentions, Intuitive misleadingly truncates Mr. Humphrey's opinions and suggests that they consist of nothing more than Intuitive's "primary concern"

² Although Mr. Humphrey does examine some engineering documents that post-date Intuitive's X/Xi design process, these documents merely confirm what is clear from Intuitive's contemporaneous design documents and communications – using a wireless connection for a necessarily physically connected component was all about preventing a reset of the use counter, not any purported (and unstated) functional benefits.

³ This phrase "primary concern" when fairly considered in the context of Mr. Humphrey's entire expert report is synonymous with the concepts of main objective or key factor. It is not a reference to Intuitive's corporate state of mind.

⁴ The filed underseal version of Cahoy Dec. Ex. 12 can be found at Dkt. 130-19.

1 when considering the X/Xi encryption design. In so doing, Intuitive focuses on just four
 2 paragraphs in Kurt Humphrey’s opening report, and complains that those four paragraphs
 3 are based “on a recitation of selective quotations from a handful of internal emails and
 4 documents.” Dkt. 118 at p. 5. Intuitive ignores the other 19 paragraphs in Mr. Humphrey’s
 5 opening report that fully presents his complete expert analysis of the evidence in the record,
 6 and puts these statements of lead Intuitive engineers in context.

7 Based on his decades of relevant experience, Mr. Humphrey details his analysis of
 8 the record evidence in 23 paragraphs of his report, almost all of which specifically discuss
 9 relevant engineering documents and communications on subjects such as: (1) engineering
 10 design documents discussing the prior, non-RFID solution as a technically suitable backup
 11 (Cahoy Dec. Ex. 9 at ¶¶ 38-39); (2) lack of reliability issues with the prior, non-RFID
 12 solution (Id. at ¶¶ 40-42); (3) product availability and cost (Id. at ¶¶ 43-47). In view of a
 13 lack of documented concerns about the non-RFID solution for these issues, Mr. Humphrey
 14 also examined the official, stated concerns of Intuitive lead engineering personnel that their
 15 design goal was to make sure the encryption was such that third parties don’t “[t]ake an
 16 expired instrument and restore its available lives.” Id. at ¶¶ 47-51. Mr. Humphrey then
 17 examines later confirmatory statements and actions of Intuitive that contradict its lawyer-
 18 concocted (but not supported by early design documentation) arguments about why it
 19 implemented a wireless connection for a necessarily physically connected instrument,
 20 including later Intuitive attempts to leverage X/Xi encryption via a phaseout of Si
 21 instruments and solely to prevent access to the use counter (Id. at ¶¶ 52-55) and use of the
 22 purportedly inferior pogo-pin connection for [REDACTED]
 23 [REDACTED]

24 Even a cursory read of Mr. Humphrey’s detailed analysis of Intuitive’s design
 25 process illustrates that he does not “parrot” the language of Intuitive’s documents, but for
 26 each document discusses it in detail and in the context of an engineering design process. Mr.
 27 Humphrey then offers his opinion regarding their significance in demonstrating what
 28

1 differences do and do not exist between the hard-wired implementation and the RFID
 2 implementation, along with which differences are trivial or optional and which were
 3 actually important and implemented. Just because the technical documentation is damning
 4 as to Intuitive's explicitly expressed motives and technically demonstrable motives,⁵ does
 5 not mean an expert is prohibited from discussing and quoting from those documents.

6 Intuitive is essentially complaining about the significance that Mr. Humphrey
 7 attaches to the various pieces of evidence in the record he cites.⁶ That evidence is relevant to
 8 the justification for and factors considered in connection with the RFID chip design switch.
 9 Such contentions go to the matter of weight Mr. Humphrey's opinions should be accorded
 10 and are the proper subject of robust cross examination, not wholesale exclusion, as sought
 11 by Intuitive. Kurt Humphrey's analysis of the X/Xi RFID chip design record is admissible
 12 expert testimony.

13 **IV. Kurt Humphrey's Opinion's On the Feasibility of Breaking the X/Xi** 14 **EndoWrist Encryption Are Proper, Relevant and Admissible**

15 **A. Mr. Humphrey's opinions in this case are not "new" in the sense argued** 16 **by Intuitive.**

17 Intuitive alleges that Mr. Humphrey is somehow offering "new" opinions on the
 18 feasibility of breaking the encryption and re-programming the use counter on an X/Xi
 19 EndoWrist. Dkt. 118 at p. 8. Apparently, Intuitive's mischaracterization of Mr. Humphrey's
 20 opinions as "new" derives at least in part from incorrect assumptions that the opinions he
 21 rendered in the prior Rebotix lawsuit indispensably relied upon only the opinions provided

22 ⁵ As admitted by Intuitive, in discussing Intuitive's engineering design documents and
 23 communications, Mr. Humphrey "parrots" (i.e., quotes) Intuitive's statements. Intuitive
 24 does not allege that Mr. Humphrey has misrepresented any of the evidence he cites to in his
 report or that he has misread any of the information contained in Intuitive's corporate
 records.

25 ⁶ Intuitive's argument that Mr. Humphrey should have reviewed additional documents, such
 26 as "the X/Xi cybersecurity risk assessment that Intuitive performed and submitted to the
 FDA" is a diversionary tactic. Intuitive's need to assess cybersecurity risk for its wireless
 27 communication interface is not relevant to its decision to use wireless communications for a
 physical connection, but instead is the result of that decision, which lacks a rational
 28 explanation other than adding encryption to the use counter that is more challenging to
 reverse engineer.

1 by another expert, Ms. Gwen Mandel; that Mr. Humphrey likewise has to rely upon Ms.
 2 Mandel's Rebotix opinions to render his opinions in this case; and that Mr. Humphrey can
 3 no longer legitimately rely upon Ms. Mandel.

4 Intuitive points to Mr. Humphrey's July 2021 report in the Rebotix lawsuit and
 5 contends that his opinion was nothing more than the bare conclusion that "Rebotix will have
 6 the capability to implement a reset of the usage counter on the X/Xi EndoWrists." Dkt. 118
 7 at p. 4. Intuitive, however, misleadingly truncates Mr. Humphrey's opinion from the
 8 Rebotix case, which states in full as follows:

9 "Third, Rebotix will have the capability to implement a reset of the
 10 usage counter on the X/Xi EndoWrists. After image extraction, the
 11 process of resetting the usage counter on the X/Xi EndoWrists will
 12 be easier than resetting the usage counter on the S/Si EndoWrists
 13 due to the reprogrammable nature of the CryptoRF chip. This means
 14 that the implementation of the Interceptor process would not need to
 15 circumvent that bit-wise strike counter, and instead could directly
 16 alter the image on the CryptoRF chip to reset the use counter to its
 17 original value. Additionally, the X/Xi usage counter is also
 18 contained on a chip that can be easily removed from the X/Xi
 19 EndoWrist and replaced once with a new CryptoRF chip that can
 20 subsequently be reprogrammed multiple times."

21 Cahoy Dec. Ex. 9, Attachment 3 at ¶ 47.

22 Intuitive then asserts that Mr. Humphrey's Rebotix report relied "heavily" on Ms.
 23 Gwen Mandel's Rebotix report. Intuitive's citing to just four short paragraphs in Mr.
 24 Humphrey's Rebotix report (¶¶ 56, 59, 67, 78) as supposedly proving he relied "heavily" on
 25 Ms. Mandel's report for "key assumptions" is a serious mischaracterization and
 26 exaggeration of the record. Dkt. 118 at p. 4. Paragraph 56 is a single sentence summarizing
 27 what Ms. Mandel's methodology achieved regarding the Atmel CryptoRF chip. Cahoy
 28 Decl. Ex. 9, Attachment 3 at ¶56. Paragraph 59 summarizes in two sentences the Rebotix
 effort to extract the image from the Atmel CryptoRF chip using a hard wire connection and
 does not even cite to Ms. Mandel's report. Id. at ¶ 59. In paragraph 67, Mr. Humphrey cites
 to a single paragraph where Ms. Mandel describes in her report identifying the user zone
 that contains the relevant information about the usage counter. Id. at ¶ 67. Lastly, in the

1 single sentence of paragraph 78, Kurt Humphrey states in his Rebotix report that Ms.
 2 Mandel's method is one of two approaches available to reset the usage counter on the Xi
 3 EndoWrist. Id. at ¶ 78.

4 Intuitive argues that Mr. Humphrey "acknowledged uncertainty" during his
 5 deposition about what Intuitive mischaracterizes as "core assertions in Mandel's report on
 6 which he had previously relied". Dkt. 118 at p. 5. At his deposition, Mr. Humphrey testified
 7 that one of the reasons he questioned the accuracy of a statement in an Intuitive reference
 8 was information provided by Ms. Mandel, among other reasons. Mr. Humphrey never stated
 9 that he relied upon Ms. Mandel alone. And Intuitive did not ask Mr. Humphrey to identify
 10 his additional reasons. Cahoy Dec. Ex. 10 at 69:13-25. On the point in question, Mr.
 11 Humphrey did not categorize, or agree to a characterization of, the information he relied on
 12 from Ms. Mandel as a "core" assertion. Lastly, Intuitive asked Mr. Humphrey to speculate
 13 on whether Ms. Mandel would continue to maintain her opinion in view of some new
 14 evidence. Mr. Humphrey did not "acknowledge uncertainty about them", his testimony was
 15 that he couldn't give a good answer since he was not privy to any of the work Ms. Mandel
 16 has done during the preceding year and a half and "so I don't even know for sure whether
 17 she would still maintain that same position or not." Id. at 70:14-71:3.

18
 19 **B. Mr. Humphrey does not have to be a "software engineer" to be qualified
 to offer opinions about feasibility of breaking encryption.**

20 Intuitive piles on another argument, asserting that simply because Mr. Humphrey is
 21 "not a software engineer", he is not qualified to "offer freestanding opinions on the
 22 feasibility of or resources involved in breaking the encryption of the X/Xi or re-
 23 programming the use counter." Dkt. 118 at 9. Further, Intuitive claims that Mr. Humphrey
 24 had to rely on Ms. Mandel for "key assumptions" given that his expertise was "not on the
 25 software side of things." Dkt. 118 at p. 4.⁷ As support for this contention, Intuitive cites to a

26
 27 ⁷ Interestingly, Intuitive did not attack Kurt Humphrey's qualifications in the Rebotix case,
 but instead argued that his methodology was unreliable and his opinions are speculative and
 irrelevant. The Rebotix court rejected those challenges to the admissibility of Mr.

28 Humphrey's opinions. Indeed, the Rebotix court was satisfied that Mr. Humphrey used the

portion of Mr. Humphrey's deposition testimony in this case. Intuitive implies that Mr. Humphrey conceded that Ms. Mandel had experience or expertise he didn't have pertinent to the reverse engineering of the X/Xi use counter. Mr. Humphrey, however, made no such concession. This is evident from the question and answer Intuitive leaves out of its citation (*i.e.*, Cahoy Dec. Ex. 10 at 124:7-15). (Dkt. at p. 4).

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**2 Q. Did she [Ms. Mandell] have any experience or expertise
3 that you didn't with respect to reverse engineering
4 the X/Xi use counter?**

**5 A. No. I don't recall anything specific about
6 that.**

7 Q. So you believe this is something you could
8 have done yourself?

9 A. Well, it would have taken a team of us to do
10 that. My expertise tends to be more in the hardware,
11 not the software side of things, so I would have used
12 one of my software experts probably to -- just as I
13 think there are teams of people working for both
14 Rebotix and Restore, as well as even third-party
15 labs, I think working to try and address this issue.

Cahoy Decl. Ex. 10 at 124:2-15.

C. Mr. Humphrey's opinions do not conflict with those he presented in the Rebotix lawsuit.

Intuitive seems to suggest that Mr. Humphrey's opinions in this case are also "new" because they supposedly conflict with his prior opinions in the Rebotix case. Attempting to make this case, Intuitive first argues that Mr. Humphrey "alternatively described aspects of the Rebotix process as 'simple,' 'straightforward,' and 'easier' than for the S/Si." Dkt. 118 at p. 4 (citing to ¶¶ 69-76 of Mr. Humphrey's Rebotix report). Intuitive's oversimplifies and mischaracterizes the contents of those cited paragraphs by ignoring the context of the discussion both in each individual paragraph and as a whole: the context being assessing the effort to reverse engineer a second chip where the image, implemented usage counter, and extractable data are similar or identical to a first chip that has already been reverse

"available information to form his own opinions and conclusions." Cahoy Dec. Ex. 11 at 9-10.

1 engineered makes the effort more straightforward. Cahoy Dec. Ex. 9, Attachment 3 at ¶¶
2 69-76.

3 Mr. Humphrey does not describe aspects of the Rebotix reverse engineering process
4 as “simple” -- he uses the word “simpler” to describe the aspect of the reverse engineering
5 process that builds upon information obtained from prior efforts with a similar chip. He uses
6 this description particularly in terms of image analysis and understanding how the usage
7 counter in the Xi is implemented based on understanding the prior implementation of the
8 same usage counter function in the S/Si EndoWrists and the similarity between the data
9 extracted from the Xi EndoWrist and prior data analyzed by Rebotix on the S/Si EndoWrist.
10 Cahoy Dec. Ex. 9, Attachment 3 at ¶¶ 70, 71, 75 and 76.

11 Turning to Mr. Humphrey’s opinions in this case, Intuitive says in its motion: “Fast
12 forward more than a year and a half, and Humphrey, hired this time by SIS’s counsel, still
13 opines that a process to break the encryption on the X/Xi chip and design a way to
14 reprogram the use counter is feasible, but he no longer describes it as simple,
15 straightforward, and even ‘easier’ than for the Si.” Dkt. 118 at 5. Intuitive then claims Mr.
16 Humphrey concedes in this case that, “as compared to the encryption used for the use
17 counter of the Si EndoWrists, the Xi encryption requires substantially more time and
18 resources to reverse engineer.” Id.

19 As pointed out in the discussion above, Intuitive mischaracterizes and misleadingly
20 juxtaposes unrelated aspects of Mr. Humphrey’s analyses. In his Rebotix report cited by
21 Intuitive, Mr. Humphrey did not describe the process to break the encryption on the X/Xi
22 chip as simple, straightforward and even easier than for the Si. Instead, Mr. Humphrey
23 comments in his Rebotix report on the relative ease of resetting the usage counter and the
24 process of image analysis. Cahoy Dec. Ex. 9, Attachment 3 at ¶¶ 47 and 70. Intuitive then
25 cites paragraph 14 of Kurt Humphrey’s report in this case in an inaccurate and misleading
26 juxtaposition with the paragraphs cited from the Rebotix report. Cahoy Dec. Ex. 12 at ¶ 14.
27 In paragraph 14, Mr. Humphrey is addressing the financial and computing resources needed
28

1 to reverse engineer the encryption on the X/Xi EndoWrists as compared to the Si
2 EndoWrists. This paragraph says nothing about comparing the process of resetting the usage
3 counter or the process of image analysis for those two types of EndoWrists which are the
4 subjects of the cited paragraphs from his Rebotix report.

5 Kurt Humphrey's opinions in this case are not "new" in any sense which Intuitive
6 suggests. The fact is that additional information became available during discovery in this
7 case and was made available to Mr. Humphrey for his consideration. Thereafter, Mr.
8 Humphrey combined the additional information from this litigation with the evidence he
9 was aware of from the Rebotix case in order to update his expert opinions and account for
10 the additional evidence relevant to the issues he was addressing with respect to SIS.

11 Mr. Humphrey has not "walked away from the opinions and approach he espoused
12 in *Rebotix*", as alleged by Intuitive. Dkt. 118 at 10. Accounting for new information not
13 available at the time of his Rebotix report by refining his opinions is not walking away from
14 his earlier opinions. Mr. Humphrey has the expertise and describes a reliable approach to
15 analyzing the evidence in this case, both of which support his opinions about the feasibility
16 and resources involved in breaking the encryption on the X/Xi RFID chip and re-
17 programming the use counter. He does not have to be a "software engineer" to offer these
18 opinions.

19 Mr. Humphrey examined the technical documents related to the feasibility and
20 resources involved in breaking the encryption and re-programming the use counter. That
21 analytical foundation is still valid and described in his expert report, in addition to Mr.
22 Humphrey's legitimate reliance on Ms. Mandel's work, which he did not disavow. Intuitive
23 may address any flaws it believes exist in these foundational elements during cross-
24 examination at trial. Mr. Humphrey, therefore, ought to be able to present his opinions to
25 the jury at trial.

V. **Kurt Humphrey does not offer conflicting opinions on the timing of when X/Xi resets could have been performed.**

Intuitive erroneously claims that Mr. Humphrey “offers several [*i.e.* four] conflicting hypothetical timeframes” for when a fully developed process to successfully reset an X/Xi EndoWrist use counter could have been accomplished, but for Intuitive’s anticompetitive conduct in this case. Dkt. 118 at 10. Intuitive identifies these “four different dates” as: “any time in the last five years,” “at least as early as 2019,” “January 1, 2021,” and “January 1 2022”, but deceptively takes those dates out of context. Dkt. 118 at p. 5.

The “at least as early as 2019” references a possible time frame consistent with being compressed through the use of additional computing power and financial resources. Mr. Humphrey states in his report:

“Reverse engineering of the X and Xi EndoWrist encryption is simply a matter of computing power and financial resources. The time necessary to reverse engineer an X or Xi EndoWrist would be compressed with additional resources, and would have been possible within a similar time frame **at least as early as 2019.**”

Cahoy Dec. Ex. 9 at ¶ 15 (emphasis added).

“Any time in the last five years, if not earlier” is Mr. Humphrey’s assessment of when the reverse engineering of X/Xi EndoWrist use counter could have been performed had the appropriate funding and resources been available to offset the impact of Intuitive’s anti-competitive conduct.

“In sum, Intuitive substantially increased the difficulty of reverse engineering the EndoWrist use counter from the S/Si EndoWrists to the X/Xi EndoWrists. Although this does not make reverse engineering of the X/Xi impossible, it makes it more difficult, time-consuming, and expensive. This reverse engineering work could have been performed at **any time in the last five years,** if not earlier, had the appropriate funding and resources been available.”

Cahoy Dec. Ex. 9 at ¶ 36 (emphasis added).

The references to the “January 1, 2021 or January 1, 2022” are dates Intuitive has taken from Mr. Bero’s report, not Mr. Humphrey’s report. Moreover Mr. Bero cites these dates as potentially when SIS would have been able to reset the X/Xi EndoWrist use counters in house in the context of various damages scenarios that he considered, if the

reverse engineering efforts had begun at a time certain. These dates have nothing to do with the earliest dates corresponding to when the reverse engineering work could have been performed given the appropriate level of funding and resources.

“SIS (relying on either Rebotix, Restore or another third-party technology provider) would have been able to reset the X/Xi EndoWrist instruments use counter either by January 1, 2021 or January 1, 2022, and SIS, Rebotix or Restore would have been able to repair X/Xi EndoWrist instruments as of either **January 1, 2021 or January 1 2022**.”¹⁹

Cahoy Dec. Ex. 7 at p. 5 (emphasis added).

Intuitive claims that Mr. Humphrey was asked for the basis of his opinions on timing at his deposition with respect to these four different dates. Dkt. 118 at p. 5. That was not the case. Mr. Humphrey was asked only about the “any time in the last five years” time frame he gave in paragraph 36 of his report. Intuitive further claims that “all Humphrey could offer was: ‘Just that there is nothing that -- no evidence I’ve seen that inherently shows this work couldn’t have been started much earlier.’” Id. This quote, however, is only part of the answer Mr. Humphrey provided at his deposition.

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3 Q. Turning next to paragraph 36 which starts on 4 page 14 and continues across to page 15 of your 5 opening report, I’m going to ask you specifically 6 about the last full sentence in the paragraph that 7 appears on the top of page 15.

8 Could you read that sentence for me.

9 A. “This reverse engineering work could have 10 been performed at any time in the last five years, if 11 not earlier, had the appropriate funding and 12 resources been available.”

13 Q. What’s the basis for your opinion in this 14 sentence?

15 A. Just that there is nothing that -- no 16 evidence I’ve seen that inherently shows this work 17 couldn’t have been started much earlier. **The work 18 that’s been described in the previous page in the 19 references from the Rebotix and the Restore 20 testimonies, there is nothing obvious that would have 21 inhibited beginning that work and having completed it 22 in the previous five years if the appropriate 23 monetary resources and technical resources had been 24 available.**

Cahoy Dec. Ex. 10 (Humphrey Dep. (emphasis added)).

Mr. Humphrey's opinions about possible time frames for reverse engineering of the X and Xi EndoWrist encryption given different levels of computing power and financial resources are not "arbitrary" and do not vary widely, notwithstanding Intuitive's contrary allegations. Moreover, Mr. Humphrey explains how he analyzed the evidence to support his conclusions regarding potential date ranges for achieving successful results reverse engineering the X/Xi EndoWrist encryption. As such, Mr. Humphrey's opinions are not *ipse dixit* testimony and should be admissible at trial.

CONCLUSION

For all of the reasons stated above, SIS respectfully requests that the Court deny Intuitive's motion to exclude Kurt Humphrey's opinions in this matter.

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